

Kitchen Midden Mollusks of San Luis Gonzaga Bay

BY

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(Plate 28; 1 Table)

ON A COLLECTING TRIP to San Luis Gonzaga Bay, Baja California, Mexico, in December, 1963, a large Indian midden was observed. The species present in the midden were noted and photographs were taken of what appeared to be figures made on the surface of the ground using arrangements of shells.

After returning to California I learned that Mrs. Faye B. Howard of Santa Barbara had made similar observations during her visit to the same area in May, 1957. Because residents have recently disturbed the deposit by the construction of an air strip (i.e. since Mrs. Howard's visit in 1957), the location of this extensive midden, a list of the species present, and photographs of the figures are put on record.

Midden material occurs along the entire west end of the bay, from the swampy channels on the south to the present settlement on the north. Mrs. Howard visited the southern end of this area, while the members of the 1963 trip camped near the northern end. In the latter area, the midden is underlain by a well consolidated Late Pleistocene marine deposit, while the midden itself is loosely consolidated and contains typical midden species.

Three published reports include lists of the shells in Indian middens in the Gulf of California area; they are: GIFFORD (1946) on Puerto Peñasco, SCHENCK & GIFFORD (1952) on San Felipe, and EMERSON (1960) on San José Island. The first two lists were published prior to

KEEN (1958), and some names of the mollusks do not agree with current usage. In order to bring these two lists up to date, and for purposes of comparison, the three lists are added to mine from San Luis Gonzaga Bay (see Table 1). SCHENCK & GIFFORD (*l. c.*) gave no measure of species-frequency.

This table gives an indication of the relative abundance of the various species used as food by Indians throughout the area of the Gulf of California. It is probable that most of the small and uncommon gastropods were attached to pelecypods or picked up out of curiosity. The only gastropods that seem to have been of importance are *Muricanthus nigrinus* and *Strombus gracilior*. There are many species of clams, which formed an important item in the Indian diet.

Figures 1 and 2 (Plate 28) show the midden and some of the species contained in it. Of the species present in the San Luis Gonzaga midden, only *Trachycardium consors* has not recently been collected in the bay and has not been reported north of Bahía de Los Angeles, Baja California.

Two similar figures were observed in 1963, and one of these is illustrated here (Figure 3, Plate 28). Because the figure is on the crest of a hill, a clear perspective could not be achieved, and the representation, presumably that of a man, is indistinct. The other figure, a few feet away, was not photographed. Both were surprisingly clear when seen in the field. Mrs. Howard cleared the area

Explanation of Plate 28

Figure 1: Midden on west side of San Luis Gonzaga Bay. The most abundant species is *Strombus gracilior*.

Figure 2: Close-up of midden surface, showing valves of *Glycymeris gigantea*, two fragments of *Muricanthus nigrinus* (center and left), and one specimen of *Strombus gracilior* (left).

Figure 3: Human figure made with *Strombus gracilior*. Cluster in background represents head; body is in foreground.

Figure 4: Figure of a fish. Surrounding area has been cleared of other shells and rocks. The figure is composed of *Anadara multi-costata* (tail), *Strombus gracilior* (most of body), *Muricanthus nigrinus* (center of foreground), *Dosinia ponderosa* (on either side of *Muricanthus*, and *Pecten vogdesi* (to right of rightmost *Dosinia* valve). Figures 1 and 4 were taken by Mrs. Faye Howard in May, 1957, while figures 2 and 3 were taken by the author in December, 1963. All four figures are reproductions from kodachrome slides.



Figure 1



Figure 2



Figure 3



Figure 4

